

When the departments of the GAZETTE were differentiated, "Briefer Articles" was established to receive communications of less than two pages. Later "Open Letters" was provided for those who chose to put items of interest, discussion or criticism into this form. And for the briefest, "Notes and News" is always waiting.

The GAZETTE does not print all MSS. which are sent to it. But we can truthfully say that no communication was ever rejected because it was too short or would interest only amateurs. On the contrary we welcome the notes by amateurs for amateurs, and lament the decrease of "briefer articles."

CURRENT LITERATURE.

The Myxomycetes of eastern Iowa.

The leading paper of the latest number of the *Bulletin* of the laboratories of natural history of the State University of Iowa¹ is a descriptive catalogue of the myxomycetes of eastern Iowa, by Prof. T. H. McBride. Sixty-six species are described, and most of them are beautifully figured on the ten plates drawn by Miss Mary McBride to accompany the monograph. Incomplete as it may be for its own locality and for others further removed, there are many botanists who have desired to know something of the group who will welcome this work, and will thank its author for the care and labor he has expended in its preparation. We trust that it is only preliminary to a fuller and more elaborate account of the species of the upper Mississippi valley. We suggest as an improvement for the next edition, that the author carry his "keys" further, to include the species of the larger genera, such as *Trichia* and *Physarum*. It is a help to the beginner, out of all proportion to the labor it costs the author, to have some clue to the species, after he has been led by keys to the genus.

The Missouri Botanical Garden.

The third annual report of this institution was issued about the first of June. The report of the director, Dr. William Trelease, is most interesting to those who are watching eagerly the progress of the garden, for it summarizes the improvements of the past year, certainly one of the most active since its organization. Besides the necessary work of maintenance, many repairs and improvements have been made. They have included excavating and remaking in a substantial manner many of the walks; extensive draining; resetting of edging for

¹ Vol. II, no. 2, pp. 99—162, pl. 10.—June 1892.

the beds; replacing all the sets of steps about the parterre; rebuilding from the foundation the west wing of the greenhouse and repairing it throughout; replacing unsightly and dilapidated wooden fences with open wire or iron ones; beginning to put the fruticetum into order by removing some of the old and useless trees, subsoiling about 5 acres, spading about one acre of it from two to two and a half feet deep, and planting a small orchard and a considerable number of shrubs. In addition to the introduction of many plants brought from the West Indies by Mr. Hitchcock, a very successful attempt has been made to introduce hardy native species into the grounds. About 1500 species were planted under the direction of Mr. F. H. Horsford; a bog and artificial pond and many small beds having been prepared in the arboretum. The trees are being labeled with white-bronze plates bearing the name in raised letters, while white celluloid labels have been found best for the herbs. The Engelmann and Bernhardt herbaria have been mounted and arranged. They contain about 155,000 specimens. Dr. Trelease has also donated his private collection, chiefly of fungi, containing about 11,000 specimens, and his library of 500 books and 3000 pamphlets. Mr. Shaw's city residence has also been taken down and rebuilt in the garden, in accordance with the directions in his will. It is now occupied by the herbarium and library, for which it at present forms commodious quarters. In rebuilding, it was made fire-proof. The library now contains about 6,000 volumes, and receives a large number of exchanges.

This is truly a record of remarkable activity, and augurs well for the future. All that is done, is being done with reference to perpetuity and permanent value, a policy that cannot be too warmly commended.

Though so much foundation work is being done, immediate results in scientific lines are not lacking. The report contains a thorough-going revision by Dr. Trelease of the 21 American species of *Rumex*, illustrated by 21 full page plates; a complete recapitulation by Dr. C. V. Riley of the observations on the Yucca-moth and Yucca-pollination, together with descriptions of the species of *Pronuba* and its allies, illustrated with 10 plates: notes and observations on the species of Yucca, by Dr. Trelease, illustrated by 23 plates; a description by Dr. Trelease of *Agave Engelmanni*, n. sp., with plate; and finally a short paper by Thos. A. Williams on the fruit of *Parmelia molliuscula* Ach., a lichen whose apothecia, hitherto unknown, were discovered by Mr. Williams on a specimen in the Engelmann herbarium.

In such a foundation for research, and in these early results, American botanists may feel a just pride!

The principles of agriculture.¹

Under this title Mr. Winslow seeks to set forth the elementary principles of chemistry, physics, geology and biology so far as they affect domesticated plants and animals. We have nothing to say of the parts of the book other than the botanical, further than this, that they seem to be of about the same quality. In the physical chapter, for instance, we notice a tranverse section of a woody stem used to illustrate the "porosity of matter"! The chapter on plants wholly ignores the existence of any but the flowering ones. The consideration of these almost begins with the hoary yarn about the germination of seeds from the hand of an Egyptian mummy 3,000 years old. And what follows is not materially better. The embryo of the bean is said to be located at the "eye"; "seeds *are supposed* to contain a supply of nourishment sufficient to support the young plant until the ascending stem can reach the open air"; "a *shoot* called the radicle extends downward"; "the radicle is the origin of the roots of plants"; these are some sentences from the paragraphs on seeds. Mr. Winslow gravely argues that the directive force for the stems and roots cannot be light "as it has been found that the same directions are followed when a seed is sprouted in darkness." He therefore concludes that plants are "endowed with a kind of instinct similar to the instincts of animals." Heliotropic and nyctitropic movements "we cannot account for with certainty, in a scientific way."

The rise of the "sap" is due to "capillary attraction." The "material of the roots has a very strong attraction for water" so that the water is drawn up with considerable force, so much in fact that that "this force is sufficient to assist in the extension of buds and leaves in their growth. It is supposed to explain also the tall slender growth of crops in a wet season", in which case the author suggests that the plants are forced "out of their normal dimensions"!

Oh for a writer on elementary science who has some knowledge! However it may be in religious experience, it has been abundantly demonstrated that in science, out of the mouths of babes and sucklings praise has *not* been ordained.

Minor Notices.

MR. THEO. HOLM has prepared the "Third list of additions to the flora of Washington, D. C.", which has been published by the Biological Society of Washington.² About 80 species and varieties have been

¹ WINSLOW, I. O.—The principles of agriculture for common schools. Large 12mo. pp. 152. Chicago: The American Book Co. 1891.

² Proc. Biol. Soc. Wash., Vol. II, pp. 105—132.

added since the last supplement by Knowlton in 1886. Numerous new localities are also given.

IN 1868 Dr. G. L. Goodale published a list of the phanerogams of Maine, which has generally been known as the "Portland Catalogue." A second edition of that list has now been prepared by Mr. M. L. Fernald,¹ of Cambridge, Mass. The list incorporates the discoveries since 1868 and by marks gives some indication of the distribution of plants in the state. Mr. Fernald proposes a complete annotated catalogue later, and asks assistance particularly in the collection of cryptogams.

IN A RECENT paper in the *Proceedings* of the California Academy of Sciences² Dr. Douglas H. Campbell gives a detailed account of the structure and development of the prothallium and embryo of *Marsilia vestita*.

A SECOND EDITION of Webber's "Appendix to the catalogue of the flora of Nebraska" has been issued by Dr. Charles E. Bessey of the University of Nebraska.³ In addition to the correction of a few minor errors and the rearrangement of the index there is a supplementary list of recently reported species by Dr. Bessey.

TWO PAPERS on the Hepaticæ have recently been distributed by their author, Mr. A. W. Evans.⁴ His "Arrangement of the genera of Hepaticæ" is an attempt to bring together the genera of these plants which are best entitled to recognition into natural groups, with a citation of the place of original publication and the chief synonymy. It will doubtless be of use to students of this group. The other paper is "A provisional list of the Hepaticæ of the Hawaiian Islands" and is based upon collections made by D. D. Baldwin in 1875-6 as determined by Austin. Ten new species are described and figured, of which five are credited to "Austin MS."

THE FOREST TREES of Indiana are enumerated by Prof. Stanley Coulter in a pamphlet reprinted from the Transactions of the Indiana Horticultural Society for 1891. One hundred and eight species are found in the state. Concerning these Mr. Coulter has gathered much valuable information from his own observation, from MSS. material placed at his disposal, and from previous publications on the plants of the state, particularly as regards their distribution and economic importance.

¹ Proc. Portland Soc. Nat. Hist. 1892.

² Second series, vol. III, pp. 183-205, plate iii. April 19, 1892.

³ Contributions from the Botanical Department of the University of Nebraska, new series, III. June 14, 1892.

⁴ From Proc. Conn. Acad. Sci., vol. VIII.